AMENDMENTS TO THE CLAIMS

The following listing of claims will replace all prior versions and listings of claims in the application.

LISTING OF CLAIMS

1. (Currently Amended) A method of data entry by voice under adverse conditions for efficient and robust form filling, the method comprising:

communicating an input utterance from a speaker to a speech recognition means;

spotting a plurality of spotted words of at least two recognized spoken words within the input utterance, wherein the spotted words form a phrase containing at least one of field-specific values and commands;

obtaining blocks of text from input utterances separated from other input utterances by natural speech pauses, exactly one block of text per input utterance;

determining whether a block of text contains recognized values as opposed to commands;

populating a license plate number field of a form by concatenating, based on a sequence of input utterances from which the blocks of text are obtained, blocks of text determined to contain recognized values;

echoing ~~at least one of recognized values and commands~~ blocks of text back to the speaker via a text-to-speech system, wherein audio feedback echoing ~~at least one of recognized values and recognized commands~~ the blocks of text is performed upon interpretation of each input utterance, and a sequence of ~~the~~ recognized values echoed in the audio feedback ~~necessarily~~ exactly reflects a

sequence of ~~the~~ spotted words within the input utterance from which the recognized values are obtained;

rejecting unreliable or unsafe inputs for which a confidence measure is found to be low; and

maintaining a dialogue history enabling editing operations and correction operations on all active fields.

2. (Currently Amended) The method of claim 1, further comprising the step of determining a focus field based on word semantic, including distinguishing between the license plate number field and a state field based on recognition of a state name value as opposed to recognition of letter and number values.

3. (Canceled)

4. (Original) The method of claim 1, wherein automatic adaptation is performed once a complete form has been filled and sent for search in a database.

5. (Original) The method of claim 1, wherein a backup input system is accommodated for additional safety and flexibility.

6. (Original) The method of claim 1, wherein commands include at least one of a correction command for deletion of a last data entry, a deletion command for clearing of an entire output form buffer with restoration of all default values, a repeat command for echoing of at least one of the contents of an entire form and the contents of an entire form field as output speech, and a send command for flushing of an entire output form buffer to a communication module.

7. (Original) The method of claim 1, wherein field-specific values include at least one of letters and numbers for a license plate number field, numbers for a license plate year field, at least one of state names and state name abbreviations for a license plate state field, and at least one of vehicle make names and vehicle model names for a license plate vehicle type field.

8. (Original) The method of claim 1, wherein editing operations include at least one of replacement of the contents of a field with a field-specific value and concatenation with contents of a field of a field-specific value.

9. (Original) The method of claim 1, wherein correction operations include at least one of deleting a last data entry and clearing an entire output form buffer, wherein clearing of an entire output form buffer results in restoration of default values.

10. (Currently Amended) An article of manufacture for data entry by voice under adverse conditions enabling efficient and robust form filling, the article of manufacture comprising:

an operating system;

a memory in communication with said operating system;

a speech recognition means in communication with said operating system;

a speech generation means in communication with said operating system; and

a dialogue history maintenance means in communication with said operating system,

wherein said operating system manages said memory, said speech recognition means, said speech generation means, and said dialogue history maintenance means in a manner permitting the user to monitor speech recognition of an input utterance by means of a generated speech corresponding to at least one of field-specific values and commands contained within the phrase formed by spotted words within the input utterance, and to perform editing operations and correction operations on all active fields, wherein audio feedback echoing at least one of recognized values and recognized commands is performed upon interpretation of each input utterance, and a sequence of ~~the~~ recognized values echoed in the audio feedback ~~necessarily~~ exactly reflects a sequence of ~~the~~ spotted words within the input utterance from which the recognized values are obtained.

11. (Original) The article of manufacture of claim 10, further comprising a user interface, wherein said user interface provides a backup input system for additional safety and flexibility.

12. (Original) The article of manufacture of claim 11, wherein said user interface includes at least one of a keyboard, an active display, a touch screen.

13. (Original) The article of manufacture of claim 10, wherein the speech generation means includes at least one of a speech synthesizer and reproduction of a previously recorded voice.

14. (Original) The article of manufacture of claim 10, wherein a focus field is determined based on word semantic.

15. (Cancelled)

16. (Original) The article of manufacture of claim 10, wherein automatic adaptation is performed once a complete form has been filled and sent for search in a database.

17. (Original) The article of manufacture of claim 10, wherein commands include at least one of a correction command for deletion of a last data entry, a deletion command for clearing of an entire output form buffer with restoration of all default values, a repeat command for echoing of at least one of the contents of an entire form and the contents of an entire form field as output speech, and a send command for flushing of an entire output form buffer to a communication module.

18. (Original) The article of manufacture of claim 10, wherein field-specific values include at least one of letters and numbers for a license plate number field, numbers for a license plate year field, at least one of state names and state name abbreviations for a license plate state field, and at least one of vehicle make names and vehicle model names for a license plate vehicle type field.

19. (Original) The article of manufacture of claim 10, wherein editing operations include at least one of replacement of the contents of a field with a field-specific value and concatenation with contents of a field of a field-specific value.

20. (Original) The article of manufacture of claim 10, wherein correction operations include at least one of deleting a last data entry and clearing an entire output form buffer, wherein clearing of an entire output form buffer results in restoration of default values.

21. (Previously Presented) The method of claim 1, further comprising providing a full duplex dialogue interaction including speech recognition and passive, auditory feedback.

22. (Previously Presented) The article of manufacture of claim 10, further comprising a dialogue management means for providing a full duplex dialogue interaction including speech recognition and passive, auditory feedback.

23. (Currently Amended) The method of claim 1, further comprising using a ~~tightly coupled~~ dialogue model that provides ~~instant~~ feedback to the speaker of each ~~uttered~~ recognized block of text, affording the speaker an ~~immediate~~ opportunity to correct ~~any~~ recognition errors by: (a) speaking a command operable to designate a particular one of plural recognized blocks of text in the license plate field for replacement; and (b) providing a subsequent input utterance containing field specific values to replace the particular recognized block of text in the license plate field without replacing at least one other recognized block of text in the license plate field.

24. (Previously Presented) The method of claim 23, further comprising treating output from a recognizer as entries to a dialogue system.

25. (Currently Amended) The article of manufacture of claim 10, further comprising dialogue management means for using a ~~tightly coupled~~ dialogue model that provides ~~instant~~ feedback to the speaker of each ~~uttered~~ recognized block of text obtained from an input utterance separated from other input utterances by natural speech pauses, exactly one block of text per input utterance, thereby affording the speaker an ~~immediate~~ opportunity to correct ~~any~~ recognition errors by: (a) speaking a command operable to designate a particular one of plural recognized blocks of text in a license plate field for replacement; and (b) providing a subsequent input utterance containing field specific values to replace the particular recognized block of text in the license plate field without replacing at least one other recognized block of text in the license plate field.

26. (Previously Presented) The article of manufacture of claim 25, wherein said dialogue model treats output from said speech recognition means as entries to said dialogue management means.